



Doosan Infracore
Machine Tools

PUMA VT450 / VT750 PUMA VT900 / VT1100

High Performance Vertical Turning Center



New standard for unsurpassed high productivity, high speed and high precision

The vertical turning center is designed for long term accuracy, heavy duty cutting and to minimize floor space. Its powerful spindle drives, meehanite casting and integral box guide way provide unsurpassed rigidity.

PUMA VT450 / VT750

PUMA VT900 / VT1100





Robust Bed Construction



In order to assure heavy duty machining and optimized chip flow, the machine base body is designed and streamlined. Its small foot print help you systemizing your manufacturing plan plot in your factory.



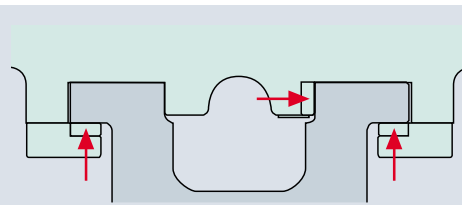
Robust Column Construction



The wide hardened and ground box ways reduce vibration promoting better tool life and surface finishes. The box ways are turcite coated which allows for 787 ipm rapid traverse rates. The Balanced Counter Weight located inside the column, neutralizes the gravity effect on the Vertical slide. It will also conserve electricity and prevent Turret Drop while in Emergency stop or Power failure.

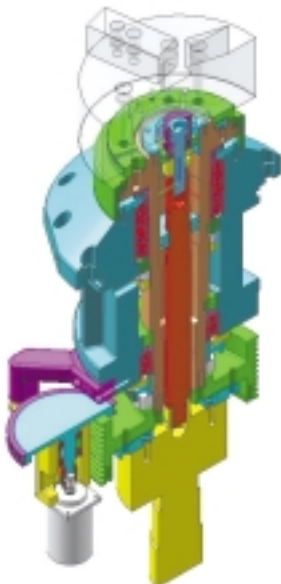
All axis Slides are Induction Hardened and Ground HRC 55 Hardness. Long-term Accuracies are very basic requirements on Doosan Infracore products.

3 adjustable Gibs on each Axis slide are provided to maintain original accuracy.

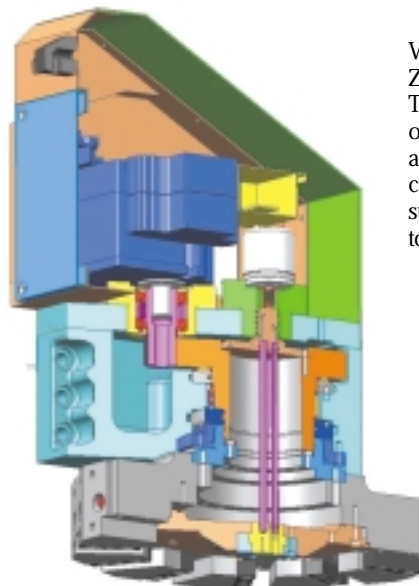


3Gibs Suport on each for longterm and easy to maintain accuracy

High performance Spindle & Turret



The spindle is supported by a double row of tapered roller bearings in the Top and Bottom of the spindle while angular thrust bearings provide tremendous radial load capability. The Cartridge Spindle is axial symmetric construction, which provides very stable accuracy all day-long even when the spindle is heated up by continuous operation.

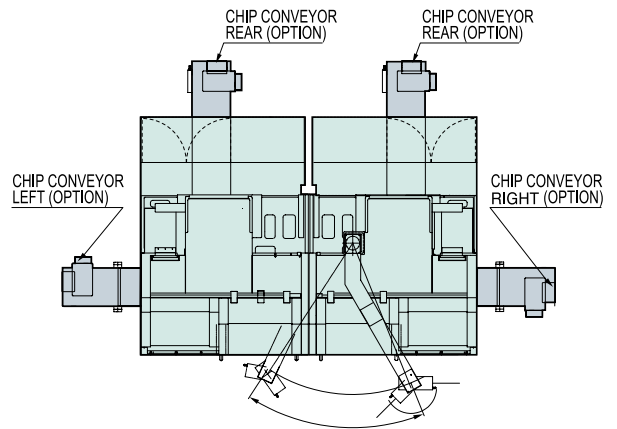


V12 Turret is ground finish for Zero accuracy. Turret has large Three piece curvic couplings. of clamping force so high accuracy and heavy-duty cutting can be achieved. The 12 station turret holds ID or OD tools.

Chip Disposal



Over head Coolant for chuck
Chip air blow
Bed wash coolant



Flexible Chip Conveyor
Right / Left (Rear / Side)

Easy operation



The swing arm on the Main Operation panel is a user-friendly feature to minimize the distance from Part to operator's Panel during set-up. Narrow Vertical panel is space saving design. The handy Sub Operation Panel beside Door for each spindle has Cycle start, Feed hold, Emergency stop, Door Open/close switches.



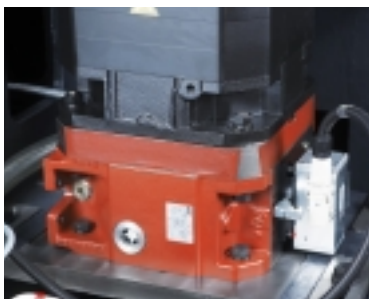
Safety Cover



12 mm Poly carvonate

double steel cover

Accessories



Gear box (Option)
PUMA VT900/VT1100(Standard)



Auto door (Option)
Pneumatic cylinder



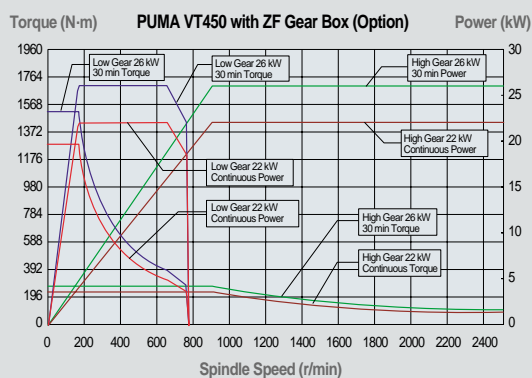
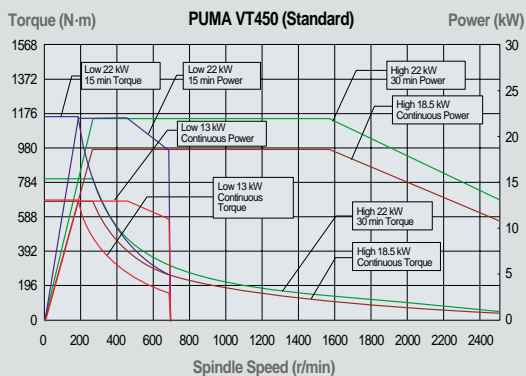
Manual tool setter (Option)
Removable type, Renishaw

PUMA VT450

VT450 / VT450M / VT450-2SP / VT450M-2SP



Main Spindle Power-torque diagram



Max. spindle speed
2500 r/min

Motor (15 min)
22 kW

Main Specification (Std.)

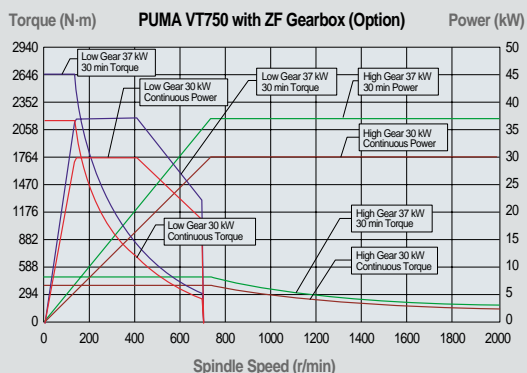
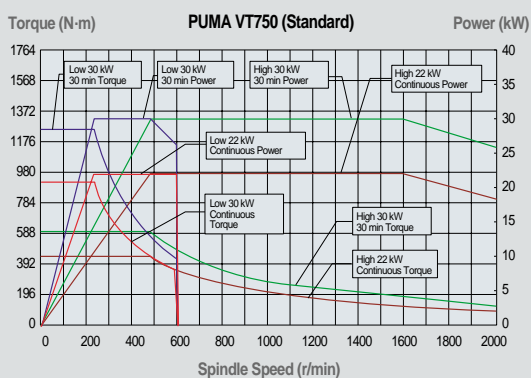
- Travels (X/Z) 240 / 450 mm
- Chuck size 305 mm
- Max. Spindle speed 2500 r/min
- Spindle motor (Cont./15min.) 18.5/22 kW
- Rapid Traverse (X/Z) 20/20 m/min
- Turret index time 1.6 s (PUMA VT450)
- No. of tool station 12 stations
- Std. M/C dimension (L × W × H) 1445 × 2491 × 3009 mm (PUMA VT450 / VT450M)
- Machine weight 6200 kg (PUMA VT450 / VT450M)

PUMA VT750

VT750 / VT750M / VT750-2SP / VT750M-2SP

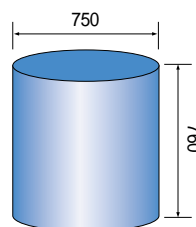


Main Spindle Power-torque diagram

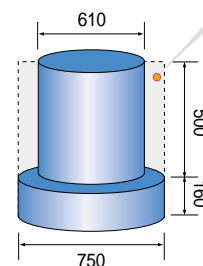


Working Range

Max. working range



Interference area



unit : mm

Max. spindle speed

2000 r/min

Motor (30 min)

30 kW

Main Specification (Std.)

- Travels (X/Z) 385 / 760 mm
- Chuck size 381 mm
- Max. Spindle speed 2000 r/min
- Spindle motor (Cont./30min.) 22/30 kW
- Rapid Traverse (X/Z) 20/20 m/min
- Turret index time 1.8 s (PUMA VT750)
- No. of tool station 12 stations
- Std. M/C dimension (L × W × H) 1850 × 2785 × 3450 mm (PUMA VT750 / VT750M)
- Machine weight 9700 kg (PUMA VT750 / VT750M)

PUMA VT900

VT900 / VT900M / VT900-2SP / VT900M-2SP



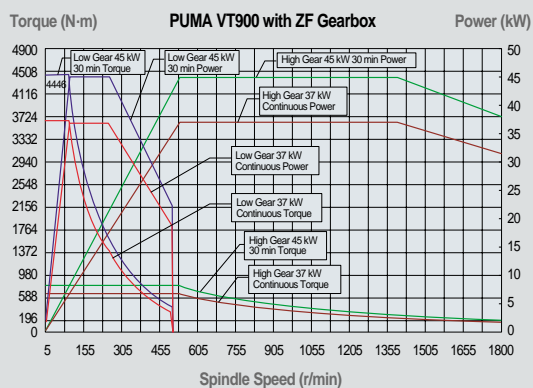
Max. spindle speed

1800 r/min

Motor(30 min)

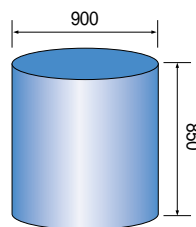
45 kW

Main Spindle Power-torque diagram

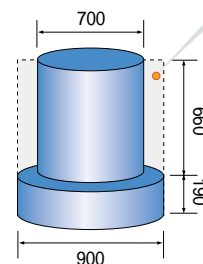


Working Range

Max. working range



Interference area



unit : mm

Main Specification (Std.)

- Travels (X/Z) 470 / 850 mm
- Chuck size 610 mm
- Max. Spindle speed 1800 r/min
- Spindle motor (Cont./30min.) 37/45 kW
- Rapid Traverse (X/Z) 20/20 m/min
- Turret index time 2.0 s (PUMA VT900)
- No. of tool station 12 stations
- Std. M/C dimension 2130 × 3050 × 3621 mm (PUMA VT900 / VT900M)
- Machine weight 12500 kg (PUMA VT900 / VT900M)

PUMA VT1100

VT1100 / VT1100M



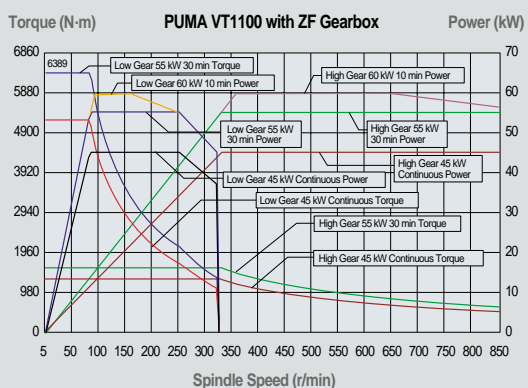
Max. spindle speed

850 r/min

Motor (10 min)

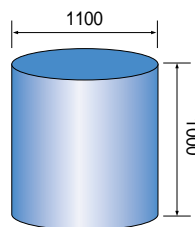
60 kW

Main Spindle Power-torque diagram

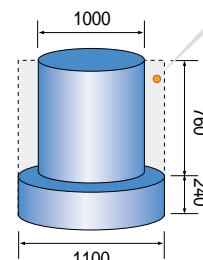


Working Range

Max. working range



Interference area



unit : mm

If working length
240mm excess,
interference area

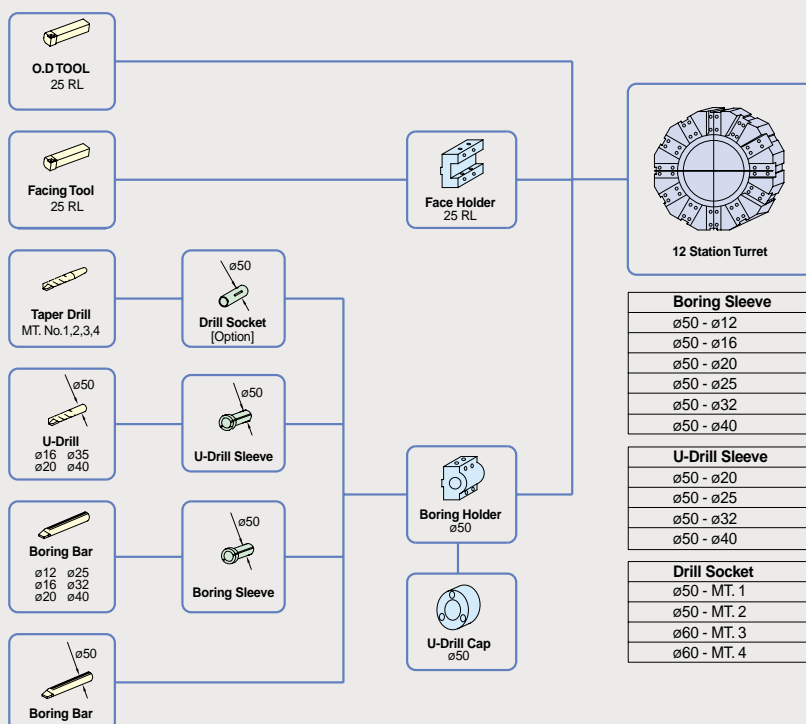
Main Specification (Std.)

- Travels (X/Z) 580 / 1000 mm
- Chuck size 800 mm
- Max. Spindle speed 850 r/min
- Spindle motor (Cont./30min./10min.) 45/55/60 kW
- Rapid Traverse (X/Z) 20/20 m/min
- Turret index time 2.2 s
- No. of tool station 12 stations
- Std. M/C dimension (L × W × H) 2850 × 3305 × 4012 mm
- Machine weight 22000 kg

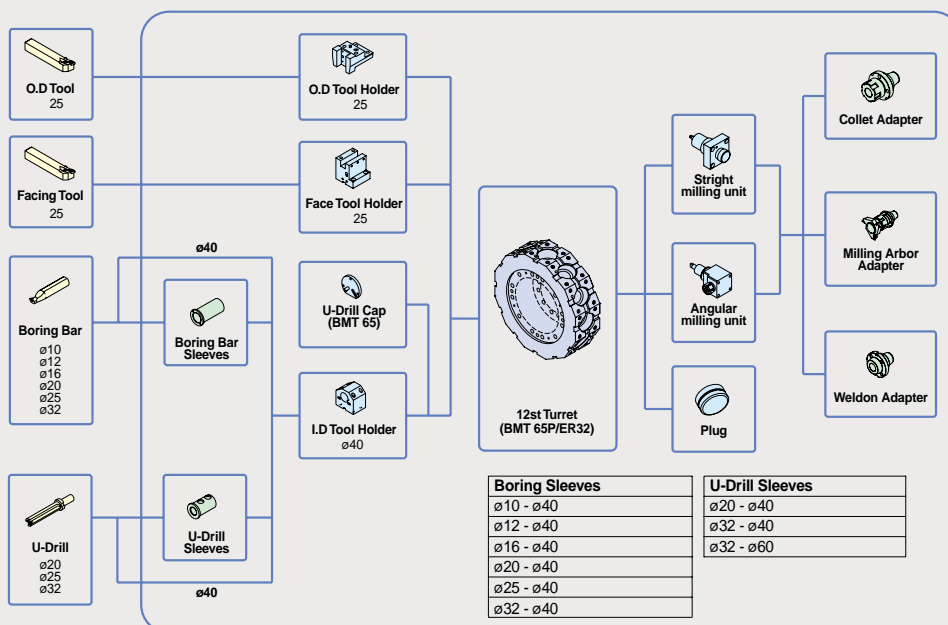
Tooling System

unit : mm

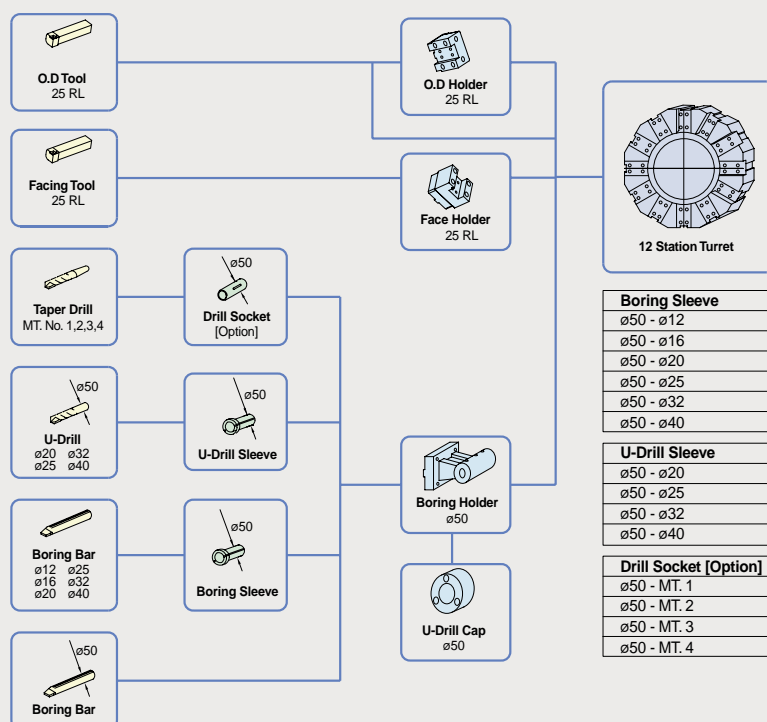
PUMA VT450 / VT450-2SP



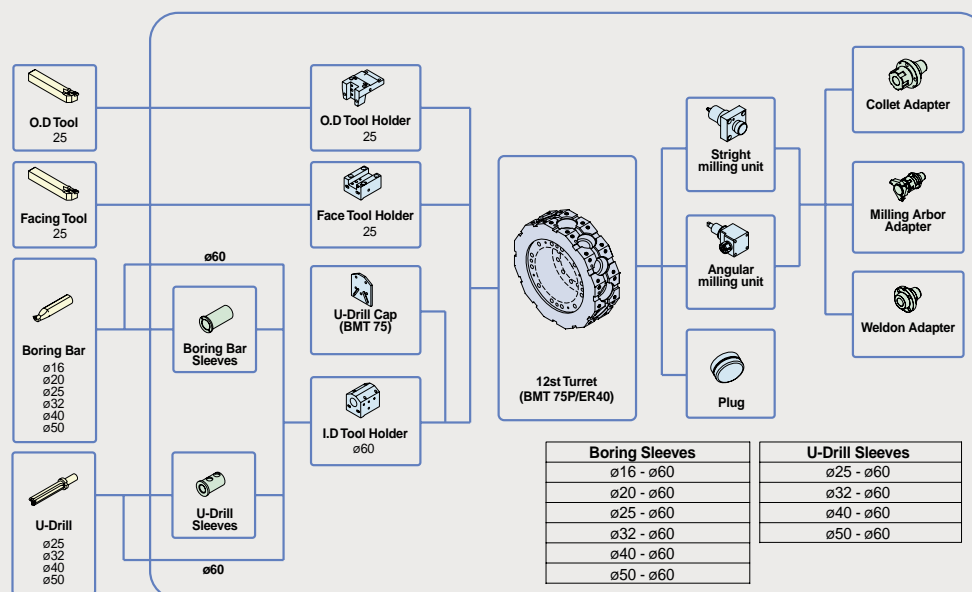
PUMA VT450M / VT450M-2SP



PUMA VT750 / VT750-2SP



PUMA VT750M / VT750M-2SP

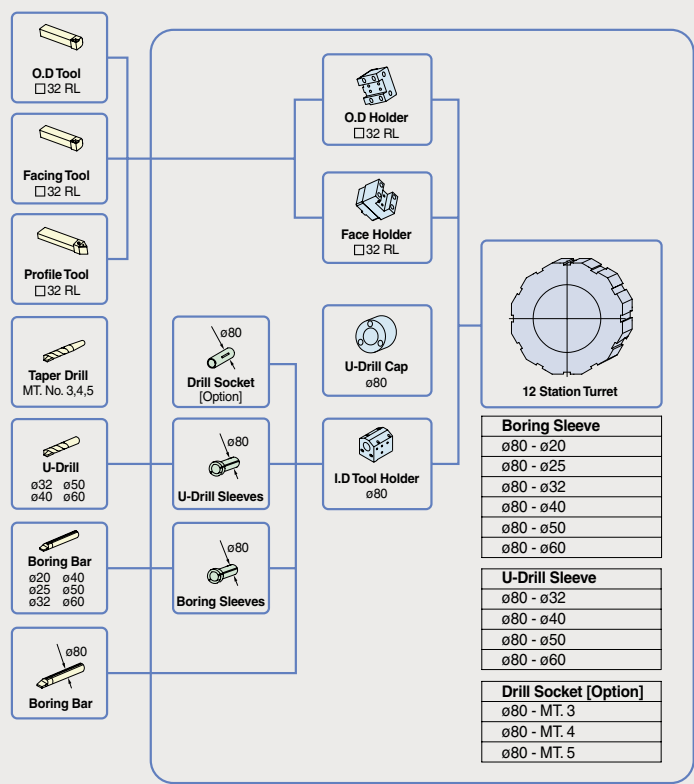


Note) Above tooling system is our recommendation. Depending on export condition, the standard tooling packed with the machine can be different.

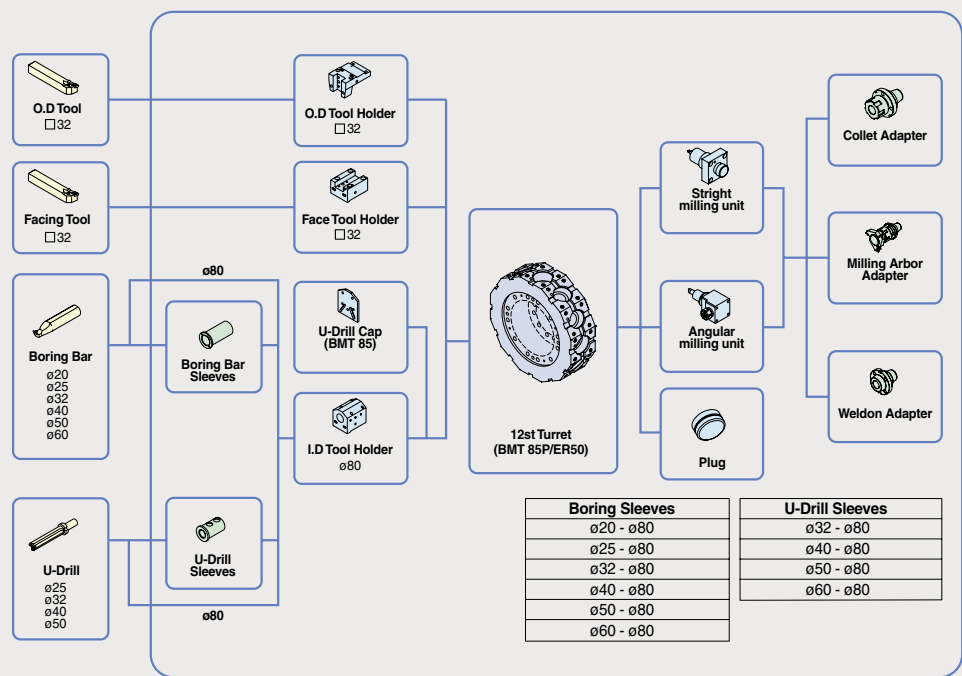
Tooling System

PUA VT900 / VT900-2SP

unit : mm

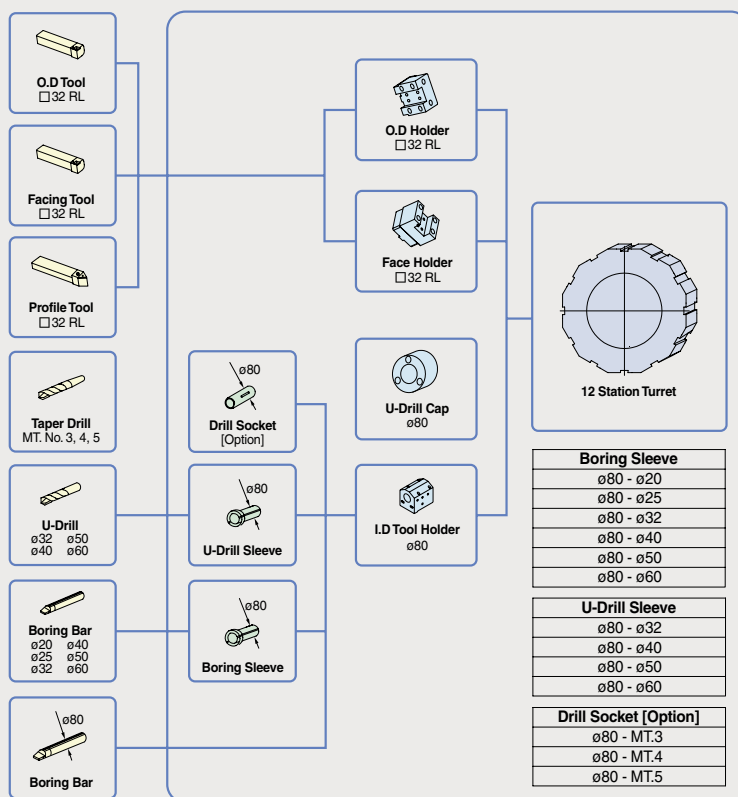


PUMA VT900M / VT900M-2SP

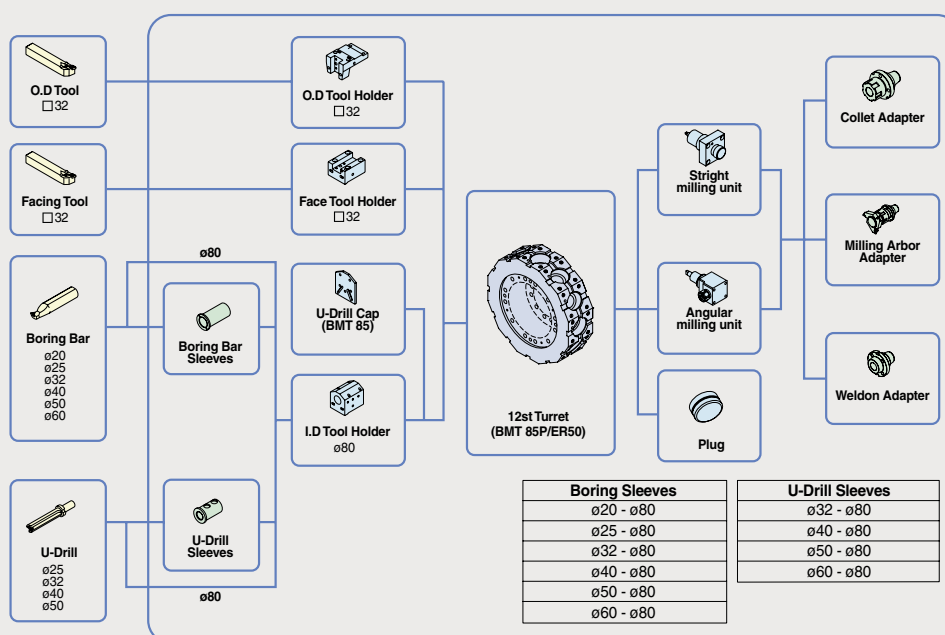


PUMA VT1100

unit : mm



PUMA VT1100 M

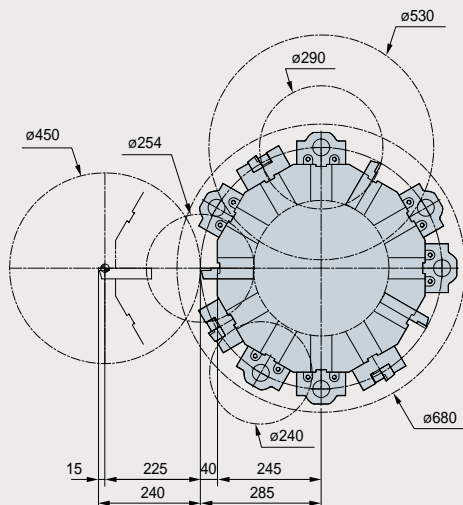


Note) Above tooling system is our recommendation. Depending on export condition, the standard tooling packed with the machine can be different.

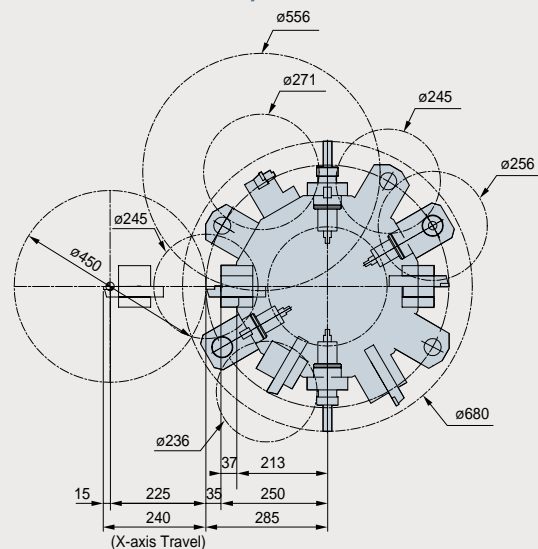
Tool Interference Diagram

unit : mm

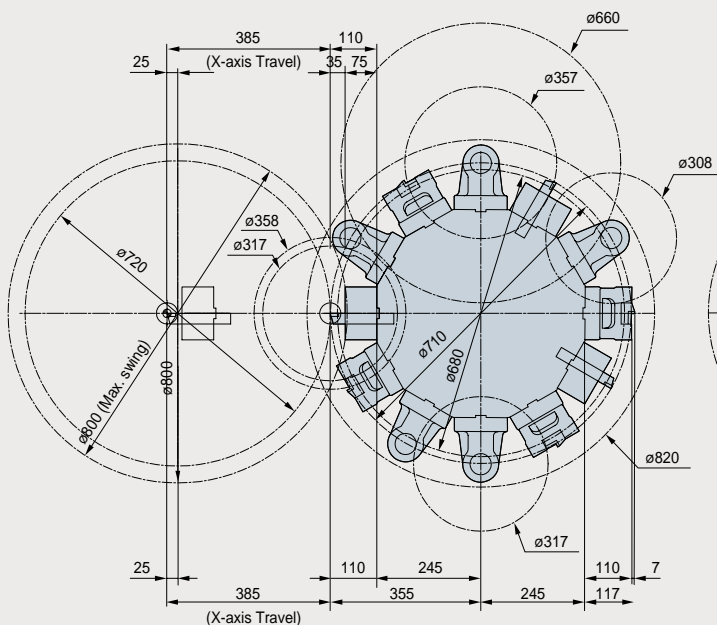
PUMA VT450 / VT450-2SP



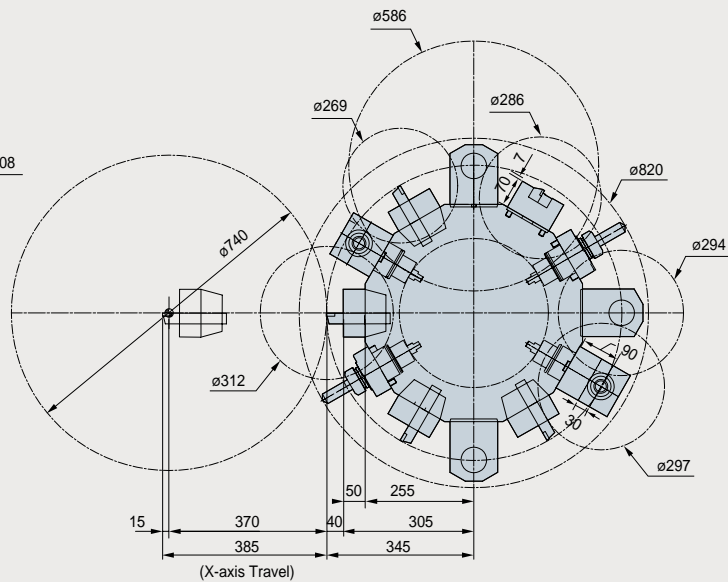
PUMA VT450M / VT450M-2SP



PUMA VT750 / VT750-2SP

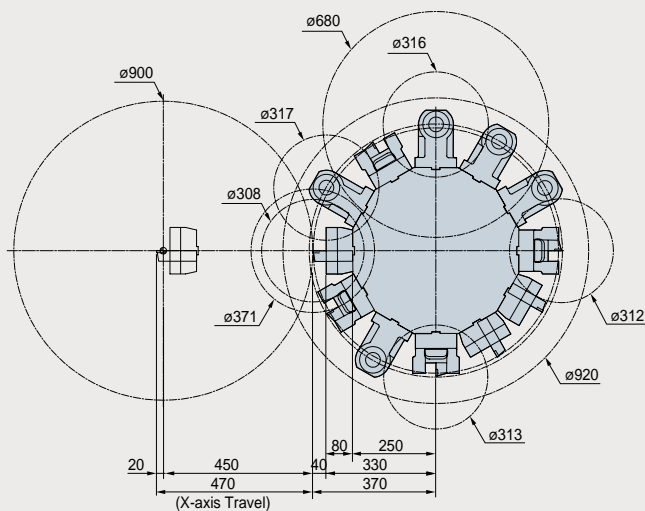


PUMA VT750M / VT750M-2SP

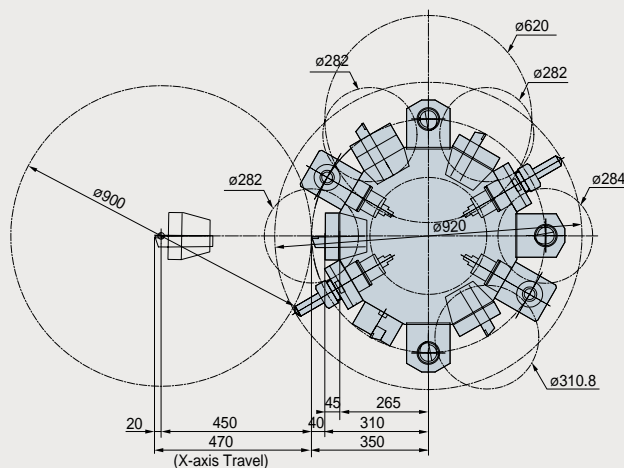


unit : mm

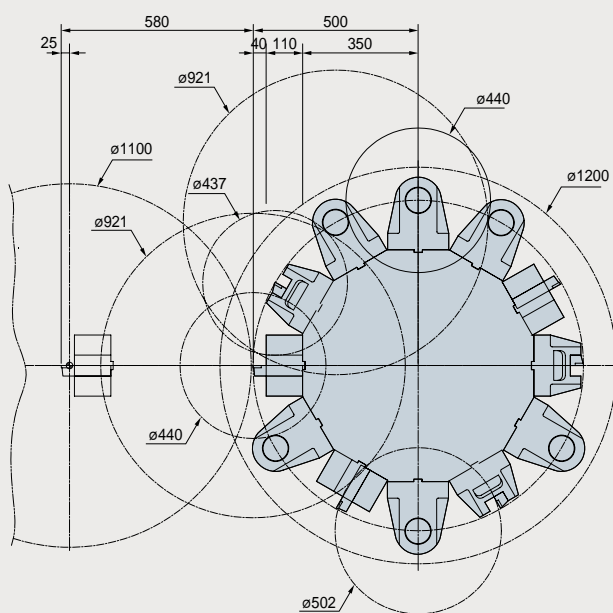
PUMA VT900 / VT900-2SP



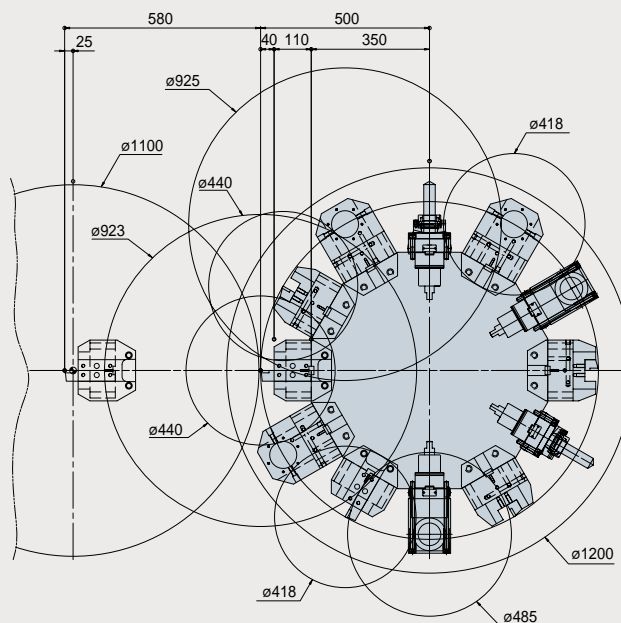
PUMA VT900M / VT900M-2SP



PUMA VT1100



PUMA VT1100M

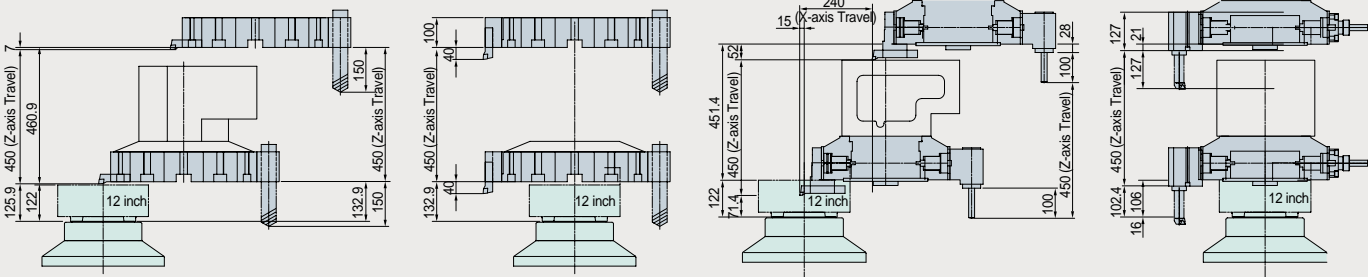


Working Range

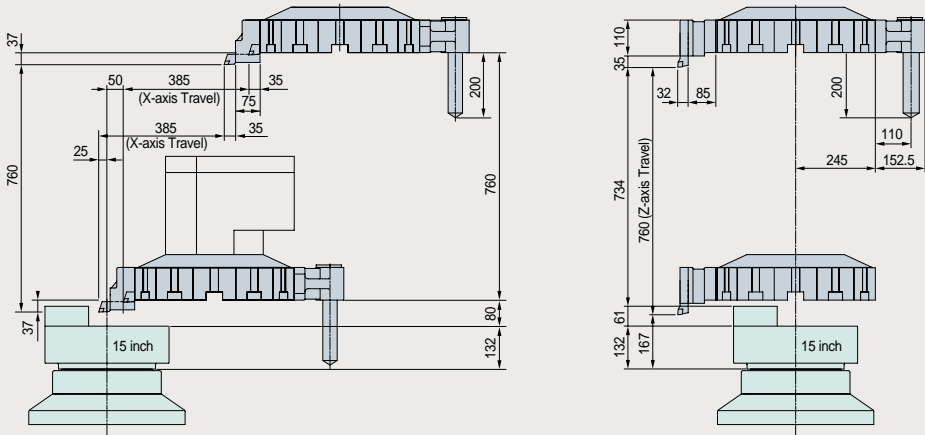
unit : mm

PUMA VT450 / VT450-2SP

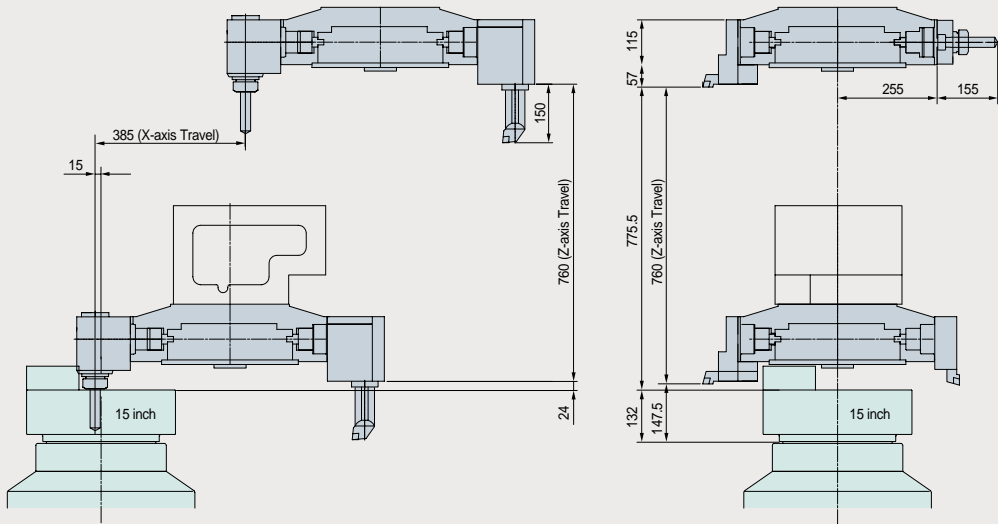
PUMA VT450M / VT450M-2SP



PUMA VT750 / VT750-2SP

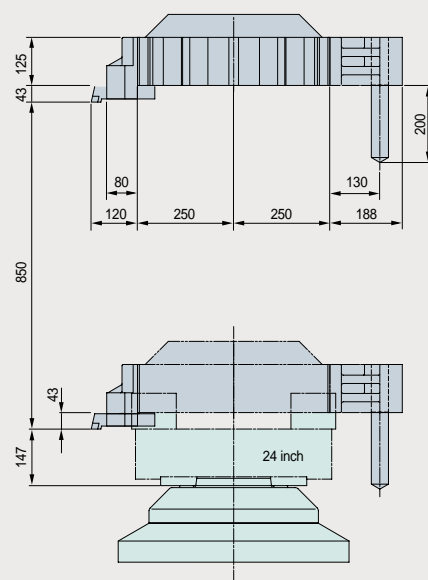
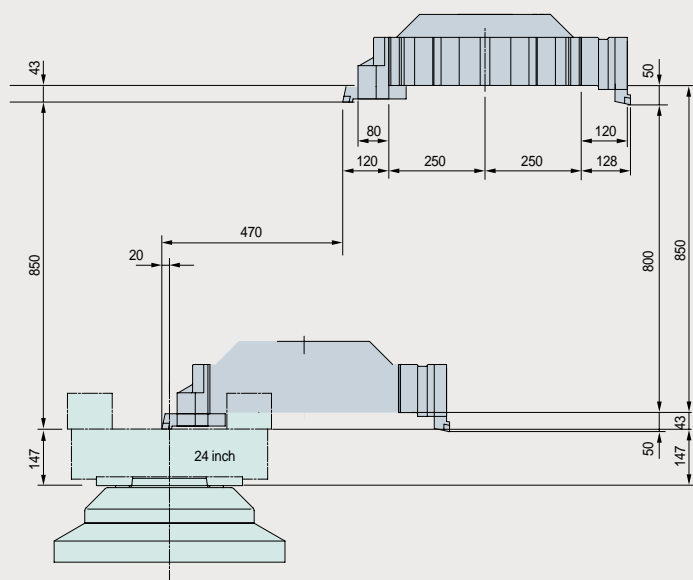


PUMA VT750M / VT750M-2SP

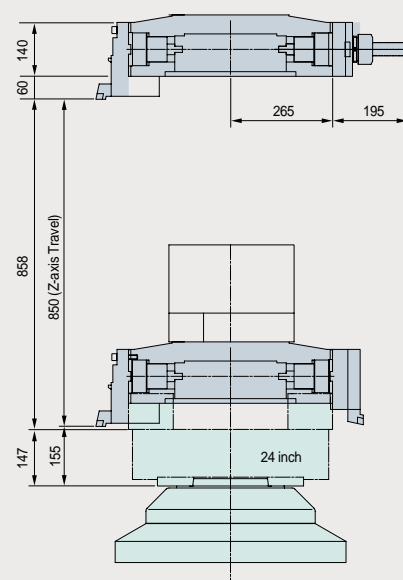
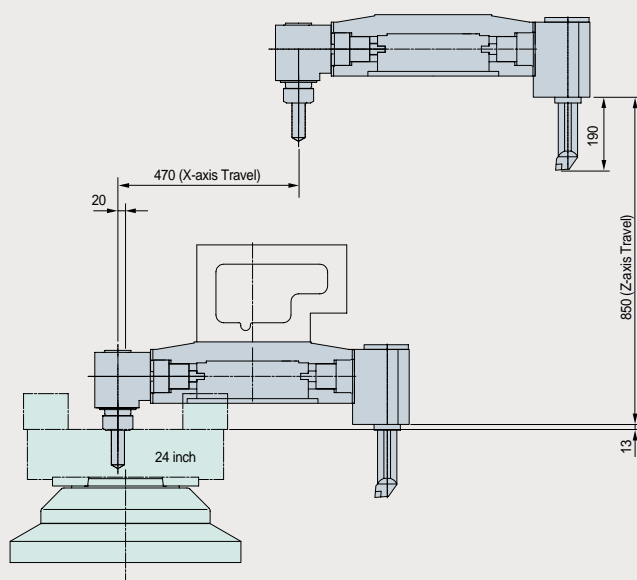


unit : mm

PUMA VT900 / VT900-2SP



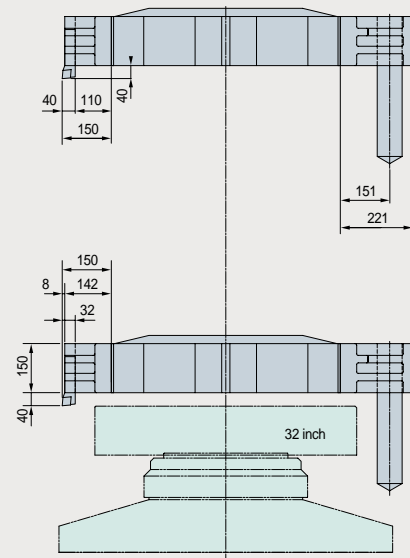
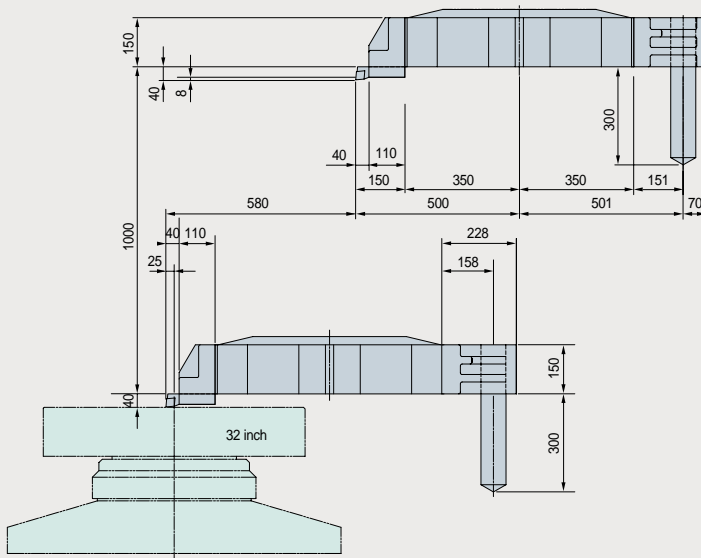
PUMA VT900M / VT900M-2SP



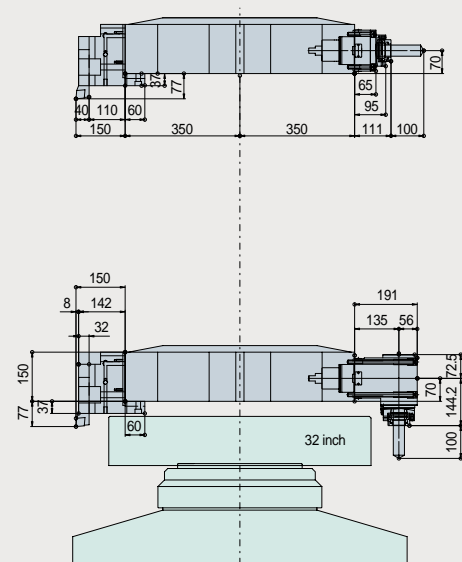
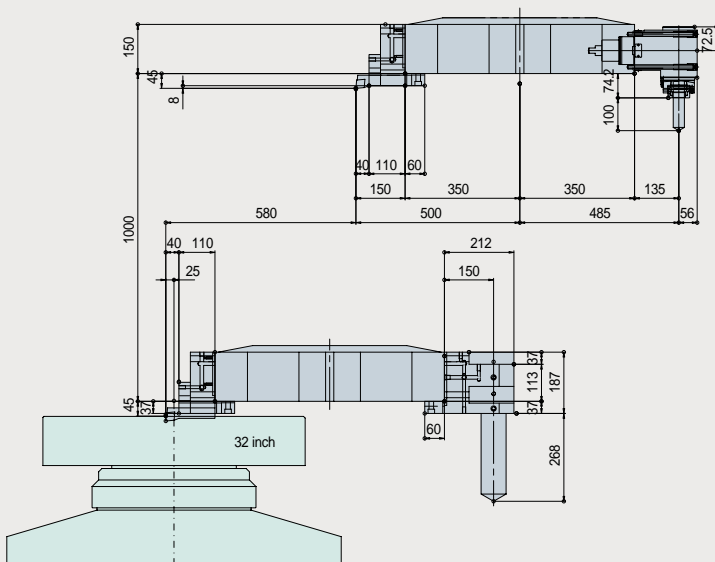
Working Range

unit : mm

PUMA VT1100



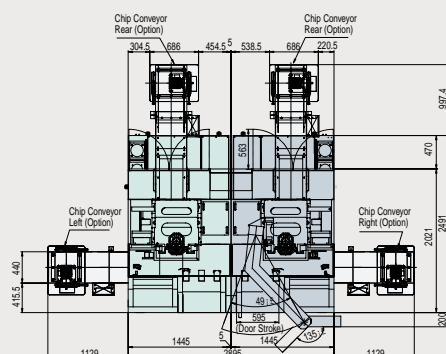
PUMA VT1100M



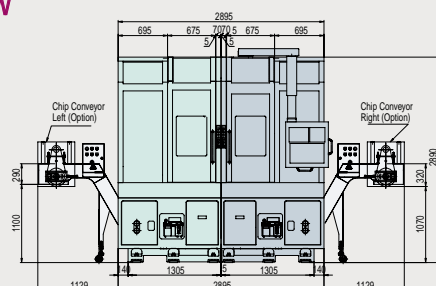
External Dimension

unit : mm

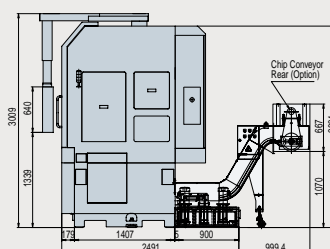
TOP VIEW



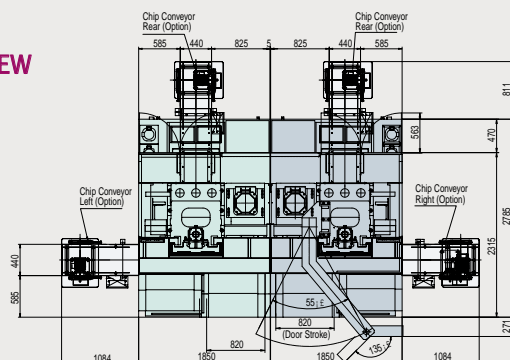
FRONT VIEW



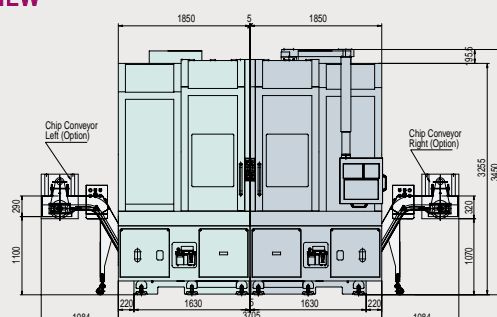
SIDE VIEW



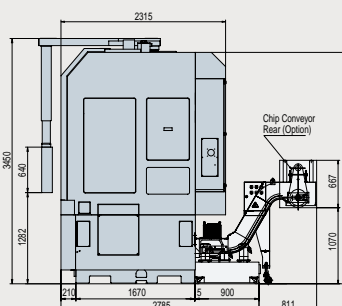
TOP VIEW



FRONT VIEW



SIDE VIEW



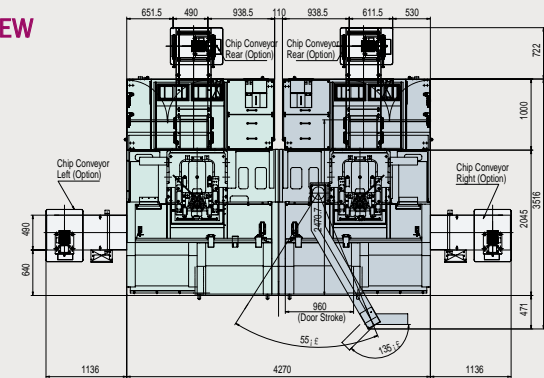
**PUMA VT450 / VT450M /
PUMA VT450-2SP / VT450M-2SP**

PUMA VT750 / VT750M
PUMA VT750-2SP / VT750M-2SP

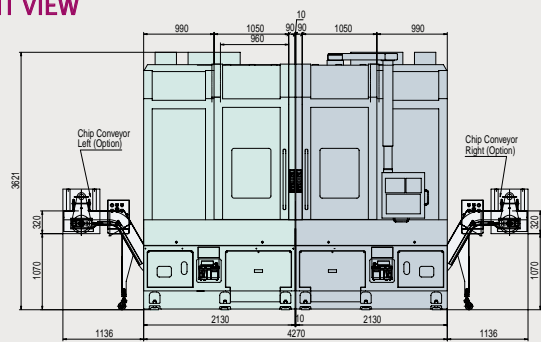
External Dimension

unit : mm

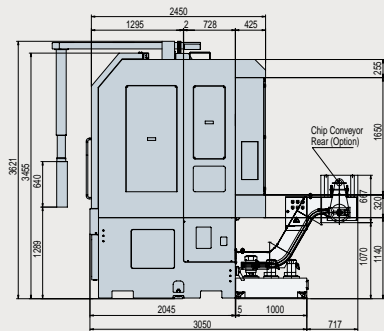
TOP VIEW



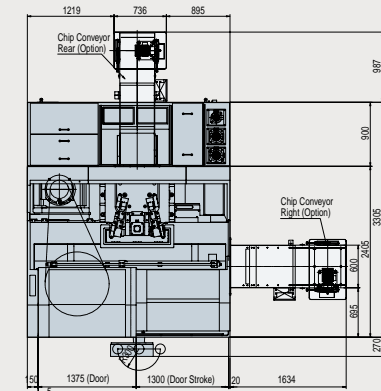
FRONT VIEW



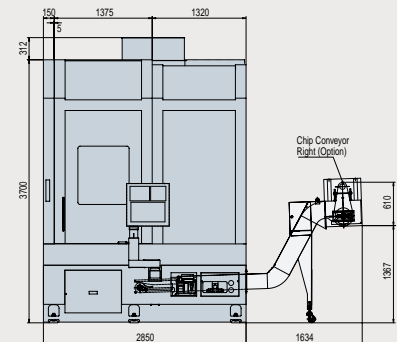
SIDE VIEW



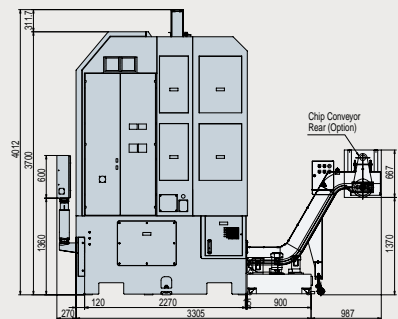
TOP VIEW



FRONT VIEW



SIDE VIEW



PUMA VT900 / VT900M
PUMA VT900-2SP / VT900M-2SP

PUMA VT1100 / VT1100M

Machine Specifications

| Item | | | VT450 | VT450-2SP | VT450M | VT450M-2SP | VT750 | VT750-2SP | VT750M | VT750M-2SP |
|--------------|--------------------------------------|----------------|---------------------------|----------------|----------------|-------------|---------------------------|----------------|----------------|-------------|
| Capacity | Swing over bed | mm | 580 | | | | 800 | | | |
| | Swing over saddle | mm | 450 | | | | 610 | | | |
| | Recom. Turning diameter | mm | 380 | | | | 450 | | | |
| | Max. turning diameter | mm | 450 | | | | 750 | | | |
| | Max. turning length | mm | 450 | | | | 760 | | | |
| Travel | X-axis travel | mm | 240 | | | | 385 | | | |
| | Z-axis travel | mm | 450 | | | | 760 | | | |
| Main spindle | Spindle speed | r/min | 2500 | | | | 2000 | | | |
| | Spindle nose | ASA | A2#8 | | | | A2#11 | | | |
| | Spindle bearing diameter | mm | 120 | | | | 160 | | | |
| | Spindle bore diameter | mm | 62 | | | | 77 | | | |
| | Main spindle indexing angle (C-axis) | deg | - | 360 (in 0.001) | | | - | 360 (in 0.001) | | |
| Turret | No. of tool stations | st | 12 | | | | 12 | | | |
| | OD tool size | mm | 25 | | | | 25 | | | |
| | Boring bar diameter | mm | ø50 | | ø40 | | ø50 | | ø60 | |
| | Indexing time | s | 1.6 | | 1.2 | | 1.8 | | 1.4 | |
| Feedrates | Rotary tool spindle speed | r/min | 4000 | | | | 3000 | | | |
| | Rapid traverse | (X-axis) m/min | 20 | | | | 20 | | | |
| | | (Z-axis) m/min | 20 | | | | 20 | | | |
| Motor | Main spindle motor | kW | 22 (15min.) [26 (30min.)] | | | | 30 (30min.) [37 (30min.)] | | | |
| | Servo motor | (X/Z-axis) kW | 3.0/4.0 | | | | 3.0/4.0 | | | |
| | Rotary tool spindle motor | kW | - | | 4.5 | | - | | 7.0 | |
| Power source | Electric power supply | kVA | 50 | 95 | 55 | 100 | 55 | 105 | 60 | 115 |
| | | kVA | 55 | 105 | 60 | 110 | 65 | 125 | 70 | 140 |
| Machine size | Machine height | mm | 3009 | | | | 3450 | | | |
| | Machine dimension | (length) mm | 1445 | 2895 | 1445 | 2895 | 1850 | 3705 | 1850 | 3705 |
| | | (width) mm | 2491 | | | | 2785 | | | |
| | Machine weight | kg | 6200 | 12400 | 6200 | 12400 | 9700 | 19400 | 9700 | 19400 |
| Controller | | | Fanuc i series | Fanuc 3i1-A | Fanuc i series | Fanuc 3i1-A | Fanuc i series | Fanuc 3i1-A | Fanuc i series | Fanuc 3i1-A |

{ } : option

Standard Feature

- Coolant flushing for bed
- Coolant flushing for chuck
- Coolant supply equipment
- Full enclosure chip and coolant shield
- Hydraulic chuck & actuating cylinder
- Hand tool kit, including small hand tool for operationst
- Hydraulic power unit
- Leveling jack screw & plates
- Lubrication equipment
- Soft jaws
- Standard tooling kit (tool holders & boring sleeve & U-Drill sleeve)
- Work light

Optional Feature

- Air blast for chuck jaw cleaning
- Automatic door with safety device
- Chip bucket
- Coolant gun
- Drill socket
- Dual chucking pressure
- Hardened & ground jaws
- High pressure coolant
- Manual tool presetter (Removable type)
- Oil skimmer (Belt type)
- Proximity switch for chuck clamp detection
- Signal tower (yellow, red, green)
- Special chucks
- Straddle tool preparation (Piping & Solenoid valve, Exclude straddle tool)

- Design and specifications are subject to change without notice.
- We do not responsible for difference between the information in the catalogue and the actual machine.

Machine Specifications

| | Item | | VT900 | VT900-2SP | VT900M | VT900M-2SP | VT1100 | VT1100M |
|--------------|--------------------------------------|----------------|-----------------|----------------|-------------|-------------|----------------|----------------|
| Capacity | Swing over bed | mm | 1000 | | | | 1270 | |
| | Swing over saddle | mm | 700 | | | | 1000 | |
| | Recom. Turning diameter | mm | 610 | | | | 800 | |
| | Max. turning diameter | mm | 900 | | | | 1100 | |
| | Max. turning length | mm | 850 | | | | 1000 | |
| Travel | X-axis travel | mm | 470 | | | | 580 | |
| | Z-axis travel | mm | 850 | | | | 1000 | |
| Main spindle | Spindle speed | r/min | 1800 | | | | 850 | |
| | Spindle nose | ASA | ISO 702-1 A2#15 | | | | ISO 702-4-No15 | |
| | Spindle bearing diameter | mm | 200 | | | | 200 | |
| | Spindle bore diameter | mm | 107 | | | | 100 | |
| | Main spindle indexing angle (C-axis) | deg | - | 360 (in 0.001) | | | - | 360 (in 0.001) |
| Turret | No. of tool stations | st | 12 | | | | 12 | |
| | OD tool size | mm | 32 | | | | 32 | |
| | Boring bar diameter | mm | ø80 | | | | ø80 | |
| | Indexing time | s | 2.0 | 1.6 | | | 2.2 | |
| Feedrates | Rotary tool spindle speed | r/min | 3000 | | | | - | 3000 |
| | Rapid traverse | (X-axis) m/min | 20 | | | | 20 | |
| | | (Z-axis) m/min | 20 | | | | 20 | |
| Motor | Main spindle motor | kW | 45 (30min.) | | | | 60 (10min.) | |
| | Servo motor | (X/Z-axis) kW | 4.0/4.0 | | | | 4.0/7.0 | |
| | Rotary tool spindle motor | kW | - | 7.0 | | | - | 11 |
| Power source | Electric power supply | kVA | 75 | 145 | 80 | 155 | 90 | 100 |
| Machine size | Machine height | mm | 3621 | | | | 4012 | |
| | Machine dimension | (length) mm | 2130 | 4270 | 2130 | 4270 | 2850 | |
| | | (width) mm | 3050 | | | | 3305 | |
| | Machine weight | kg | 12500 | 25000 | 12500 | 25000 | 22000 | |
| Controller | | | Fanuc 32i-A | Fanuc 31i-A | Fanuc 32i-A | Fanuc 31i-A | Fanuc 32i-A | |

Standard Feature

- Coolant flushing for bed
- Coolant flushing for chuck
- Coolant supply equipment
- Full enclosure chip and coolant shield
- Hydraulic chuck & actuating cylinder
- Hand tool kit, including small hand tool for operationst
- Hydraulic power unit
- Leveling jack screw & plates
- Lubrication equipment
- Soft jaws
- Standard tooling kit (tool holders & boring sleeve & U-Drill sleeve)
- Work light

Optional Feature

- Air blast for chuck jaw cleaning
- Automatic door with safety device
- Chip bucket
- Coolant gun
- Drill socket
- Dual chucking pressure
- Hardened & ground jaws
- High pressure coolant
- Manual tool presetter (Removable type)
- Oil skimmer (Belt type)
- Proximity switch for chuck clamp detection
- Signal tower (yellow, red, green)
- Special chucks
- Straddle tool preparation (Piping & Solenoid valve, Exclude straddle tool)

- Design and specifications are subject to change without notice.
- We do not responsible for difference between the information in the catalogue and the actual machine.

NC Specifications

| | Item | Spec. | Doosan Fanuc i series | Fanuc 32i-A | Fanuc 31i-A |
|--|--|----------------------------------|-----------------------|---------------------|---------------------|
| Controls | Controlled axes | | X,Z,C (!) | X,Z,C (!) | X1,Z1, X2, Z2 |
| | Simultaneously controlled axes | Std. 2 axes | 4 axes (!) | 3 axes (!) | 4 axes |
| | Backlash compensation | 0~±9999 pulses | | | |
| Axis Functions | Cs contouring control | | (!) | (!) | - |
| | Follow-up / Chamfering on/off | | | | |
| | HRV2 control | | | | |
| | Least input increment | 0.001mm / 0.0001" | | | |
| | Stored stroke check1 | Overtravel control | | | |
| Operation | Automatic operation (memory) / Buffer register | | | | |
| | Handle incremental feed | X1, X10, X100 | | | |
| | Search function | Sequence NO. / Program NO. | | | |
| Interpolation | 1st, reference position return | Manual, G28 | | | |
| | 2nd reference position return | G30 | | | |
| | Reference position return check | G27 | | | |
| | Circular interpolation | G02 | | | |
| | Continuous thread cutting | | | | |
| | Dwell | G04 | | | |
| | Linear interpolation | G01 | | | |
| | Multiple threading / Thread cutting retract | | | | |
| Feed Functions | Polar coordinate interpolation | | (!) | (!) | - |
| | Thread cutting / Synchronous cutting | | | | |
| | Feed per minute / Feed per revolution | | | | |
| | Feedrate override | 0 - 200 % (10 % unit) | | | |
| | Jog feed override | 0 - 2000 mm/min | | | |
| Auxiliary & Spindle Functions | Rapid traverse override | F0/ 25 / 100 % | | | |
| | Tangential speed constant control | | | | |
| | 1st Spindle orientation | | | | |
| | Constant surface speed control | | | | |
| | M-function | M3 digit | | | |
| | Multi-spindle control | | (!) | (!) | |
| | Rigid tapping | | | | |
| | Spindle speed override | 0~150% | | | |
| Programming Functions | Absolute / Incremental programming | | | | |
| | Canned cycle for drilling / turning | | | | |
| | Custom macro | | | | |
| | Decimal point programming / pocket calculator type decimal point programming | | | | |
| | Direct drawing dimension programming | | | | |
| | Manual guide i | Conversational programming | | | |
| | Maximum program dimension | ±9 digits | | | |
| | Multi repetitive canned cycle | G70-G76 | (!) | | |
| | Optional block skip (without hardware) | Total 9 (Only NC function) | - | | |
| | Sequence number | | N5 | N8 | N8 |
| | Programmable data input | G10 | | | |
| | Sub program call | Nested holds | 4 | 10 | 10 |
| | Tape format for FANUC series 10/11 | | | | - |
| Tool Functions | Tape format for FANUC series 15 | | - | - | |
| | Work coordinate system selection | G52-G59 | | | |
| | Auto tool offset | | | | |
| | Tool monitoring system | | - | Opt. | Opt. |
| | Direct input of tool offset value measured B | | | | |
| | Tool geometry / wear compensation | Geometry & wear data | | | |
| | Tool life management | | | | |
| | Tool nose radius compensation | G40-G42 | | | |
| Editing Op. Functions | T-code function | T2+2 digits | | | |
| | Tool offset pairs | | 64 | 64 | 32 |
| | Tool offset value counter input | | - | | |
| | Background editing | | | | |
| | Expanded part program editing | Copy, Move, Change of NC program | | | |
| Setting & Display | No. of Registered programs | | 400ea | 500ea | 500ea |
| | Part program editing / Program protect | | | | |
| | Part program storage length* | | 1280m | 640m | 640m |
| | Display of spindle speed and T-code at all screen | | | | |
| | Help function | Alarm&Operation display | | | |
| Data Input & Output | Self diagnostic function | | | | |
| | Servo setting screen / Spindle setting screen | | | | |
| | Tool path graphic display | | | Opt.(!) | |
| | I/O interface | RS-232C | | | |
| Other Functions | Memory card input and output | | | | |
| | Reader puncher control | CH1 interface | | | |
| | Ethernet function | Embedded ethernet function | | | |
| | MDI / DISPLAY unit | | 10.4" color TFT LCD | 10.4" color TFT LCD | 10.4" color TFT LCD |
| | PMC system | | | | |

*1 : Standard Part program length is different on export condition. On the addition of optional functions, its length can be reduced.

PUMA VT450 / VT750 / VT900 / VT1100



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